

Constraint Schedule Management

Description:	<p>TBL needs additional granularity regarding Network reservations and schedules to enable us to better more reliably manage the transmission system, how it's reserved, how it's scheduled, and how it's operated --- in a manner that more closely approximates how the system actually operates. To meet that need, TBL must be able to perform flowgate impact analyses of schedule or reservation transactions using the established Path Utilization Factors (PUFs) method.</p>
Why? What results will be achieved?	<p>There are a number of critical functions that will be significantly improved by being able to do PUF analysis of transmission transactions at an increased level of detail that more closely approximates the physics of transmission transactions. TBL will be able to:</p> <ol style="list-style-type: none"> 1) Accurately calculate Network short-term firm and hourly firm and non-firm ATC. (Long-Term Firm transmission requests are already assessed at this level, so this will create consistency between the different markets as well). 2) Determine which Network flowgates will be utilized by short-term firm and hourly firm and non-firm transmission requests and resulting reservations. 3) Determine how many MW of each long-term firm, short-term firm, hourly firm, and hourly non-firm scheduled Network transaction will flow across each flowgate in both the pre-schedule and real-time timeframes. 4) Curtail fewer MW of reservations (on pre-schedule) or schedules (in real-time) to achieve the necessary line-loading relief on Network flowgates. This will also mean less loss of revenue due to curtailment of non-firm transactions. 5) Use product priorities in curtailments to relieve Network constraints. 6) Identify and implement opportunities for redispatch to address Network constraints. 7) Implement potential new products that rely on the ability to make curtailments on the Network (such as Conditional Firm). 8) Make Network curtailments using standard e-tagging procedures. <p>This approach uses the minimum level of granularity needed to do PUF analysis, but no more.</p>
Anticipated Required Changes:	<ol style="list-style-type: none"> 1) TBL will make Network POR/PODs available on the TBL OASIS site for reservation and scheduling at the level of detail necessary to perform an effective impact-analysis, using PUFs. To minimize the level of detail necessary for transactions, TBL will group Network bus points together into logical "nodes" based on similarity of PUF-values and use a "node PUF" for that group of points to calculate impacts of Network reservations and schedules. TBL will register these nodal points with TSIN. 2) Network short-term firm and hourly firm and non-firm reservations will no longer be made on a system to system basis (i.e., BPAT.AVA). Instead, they will be made at the node level. This will mean an increased number of reservations for transactions in these markets.

	<ol style="list-style-type: none"> 3) All Network schedules will be submitted based on the nodal level of granularity, not on the system level (i.e., BPAT.AVA). For most customers, this will mean an increased number of tags that will describe the transaction at a lower level of granularity (i.e., UpperColumbia.NorthernAvista and LowerSnake.SouthernAvista) both on pre-schedule and in real-time. 4) Most schedulers will have an increased number of templates to manage for Network transactions. 5) Some customers may find a need for more resources to handle the additional volume of reservations and scheduling activity on the Network. 6) Curtailments will be made on Network transactions as needed to relieve network constraints using standard industry curtailment protocols. 7) Network non-firm ATC will be calculable and posted to the OASIS. 8) TBL and its customers will need to work together to train on the new procedures for Network transactions.
Alternatives Considered:	<p>These alternatives were developed in the regional group process on Constraint Schedule Management.</p> <ul style="list-style-type: none"> ▪ <u>Alternative One:</u> Bus Level Reservations and Scheduling <u>Explanation of Alternative:</u> Customers reserve and schedule all transactions at the level of detail currently used for making reservations in the Long-Term Firm market (e.g. bus and voltage). <u>Cons of Alternative:</u> Requires extensive scheduling and reservation detail which is not necessary to enable PUF analysis. Creates more for for TBL and its customers than is necessary. ▪ <u>Alternative Two:</u> TBL Deems Reservations and Schedules into Regional Groupings <u>Explanation of Alternative:</u> Customers reserve and schedule just as they do today, but a back-end system disaggregates each reservation/schedule, where deemed necessary "due to geographic diversity", into regional groupings based on generation- and load-distribution, profiled by TBL based on historical and/or forecasted data. <u>Cons of Alternative:</u> This option does not allow TBL to specify via the tag what transaction actually needs to be curtailed. Would require an additional system to do Network curtailments. Maintenance of back-office systems that are not part of everyday tools is problematic. Less ability to effectively implement redispatch and new products reliant on clarity about what is happening on the transmission system. Provides only a loose approximation of flow on the Network Flowgates at any given time, which means that the transmission

system would not be functioning all that closely to the way TBL would have it modeled.

May result in significant divergence between the expected line-loading relief as a result of a specific curtailment that what is actually achieved.

- Alternative Three: The TBL Customer-Specified Information is Used to Deem the Regional Groupings for Reservations and Schedules

Explanation of Alternative:

Customers reserve and schedule just as they do today, but a back-end system disaggregates each reservation/schedule, where deemed necessary "due to geographic diversity", into regional groupings based on generation- and load-distribution, profiled by the disaggregated load and/or generation entity.

Cons of Alternative:

This option does not allow TBL to specify **via the tag** what transaction actually needs to be curtailed. Would require an additional information system to do Network curtailments.

Maintenance of back-office systems that are not part of everyday tools is a problem.

Less ability to implement redispatch and new products reliant on clarity about what is happening on the transmission system.

Provides only a loose approximation of flow on the Network flowgates at any given time which means that the transmission system would not be functioning all that closely to the way that TBL would have it modeled.

May result in a divergence between the expected line loading relief as a result of a specific curtailment than what is actually achieved.

- Alternative Four: Status Quo

Explanation of Alternative:

Customers reserve and schedule just as they do today, with curtailments on the Interties to solve Network constraints. None of the results described above can be achieved.

Cons of Alternative:

It is entirely possible that TBL could curtail the Interties to zero and still not relieve a Network line loading problem.

The ratio of MW curtailment to MW of line-loading relief is ineffective. Sometimes it takes very large Intertie curtailments to achieve even a very small amount relief at a Network flowgate.

This option does not allow TBL to specify **via the tag** what transaction actually needs to be curtailed. Would require an additional information system to do Network curtailments, but does not provide any methodology on which to base that information system.

Cannot calculate and post hourly non-firm.